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THE OLDEST KNOWN BANDED WANDERING ALBATROSS *DIOMEDEA EXULANS* AT THE PRINCE EDWARD ISLANDS

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The oldest known wandering albatross *Diomedea exulans* at the Prince Edward Islands is estimated to have been approximately half a century old when last recaptured in 2001. Demographic studies need to continue for several more decades before the true maximum longevity of the species becomes evident.

Key words: banding, *Diomedea exulans*, maximum longevity, Prince Edward Islands, Subantarctic, wandering albatross

How long animals are able to live in the wild has always been a matter of some fascination to biologists and non-biologists alike, especially for those few species that are known or are thought to have the ability to live longer than humans. Bird banding, or ringing, has long been used to obtain maximum longevity records for birds (e.g. Rydzewski 1978, Staav 1998, 2001), but for some extremely long-lived species, most banding schemes have not been operating long enough with hard-wearing bands to be certain that reliable information on maximum longevity has been obtained.

The first wandering albatrosses *Diomedea exulans* to carry modern metal numbered bands carrying a return address, 27 in number and including both adults and fledglings, were banded at subantarctic Marion Island in the Prince Edward Islands group, southern Indian Ocean in 1951 by R. W. Rand, a pioneer South African marine biologist (Rand 1952). His early efforts were followed in 1954, when a further 114 birds were banded at Marion Island (Berruti *et al.* 1975, South African Bird Ringing Unit [SAFRING] records). Banding of wandering albatrosses followed at Kerguelen Island (1952), Macquarie Island (1954), Bird Island, South Georgia (1958) and Iles Crozet (1960; Sladen *et al.* 1968, Tickell and Gibson 1968, Battam and Smith 1983, de la Mare and Kerry 1994). In July 1956, banding of birds caught at sea commenced off the coast of New South Wales, Australia (Gibson and Sefton 1959). These early banding efforts used aluminium bands, which wore easily and so relatively few long-term recoveries ensued. For example, only one of the 1950s-banded wandering albatrosses from Marion Island was subsequently reported, after having been caught alive (and released) five years later off Australia (McLachlan 1964, Berruti *et al.* 1975, Anon. 1977).

Research on wandering albatrosses recommenced at Marion Island in 1960/65, when 650 birds were marked with aluminium US Fish & Wildlife bands (Sladen *et al.* 1968). A number of these birds has been subsequently reported (Berruti *et al.* 1975, Brown and Oatley 1982, Gartshore *et al.* 1988, SAFRING records). A few birds were marked with monel bands in the early 1970s. In 1975, marking of wandering albatrosses continued at Marion Island with stainless steel bands, followed with the addition of plastic alphanumeric bands from 1984 as part of an ongoing demographic study (Nel *et al.* 2003). By 2000, more than 8 000 had been marked with stainless steel bands. During this time, banding of wandering albatrosses has continued off the coast of Australia and a number of these birds has now been recaptured at Marion Island and at nearby Prince Edward Island, as have birds banded at Possession Island, Crozet Islands (Gartshore *et al.* 1988, Cooper and Weimerskirch 2003, SAFRING records).

Based on the above datasets, the oldest known wandering albatross at the Prince Edward Islands is reported and the bird's age is compared with what is known of maximum longevity of the species from studies conducted elsewhere and of albatrosses in general.

MATERIAL AND METHODS

On an annual basis, breeding wandering albatrosses are checked for bands at Marion Island (290 km²; 46°52'S, 37°51'E) as part of a complete count of incubating pairs (Nel *et al.* 2003). The island's annual populations were 1 869 pairs in 2001 and 1 593 in 2002

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(Crawford *et al.* 2003). In December 2001, an expedition to uninhabited Prince Edward Island (44 km²; 46°38'S, 37°57'E) surveyed its population of wandering albatrosses, and many birds occupying nest sites prior to egg-laying of an estimated population of 1 850 pairs were checked for bands (Ryan *et al.* 2003). All "foreign-banded" birds were reported to their respective banding schemes by direct contact with researchers and through SAFRING, Avian Demography Unit, University of Cape Town, to obtain primary banding data and elapsed times and thus information on maximum longevity.

RESULTS

The oldest banded wandering albatross recaptured at the Prince Edward Islands to date is a male, observed on 18 and 19 December 2001 bearing Australian Bird and Bat Banding Scheme band number 140-25350, while occupying a fresh but empty nest on the east side of Albatross Valley, Prince Edward Island, near the edge of the sea cliff. The bird was originally banded (as 140-03339) on 24 July 1960, 41 years and four months previously off Austinmer, New South Wales, Australia (34°18'S, 150°58'E) by D. Gibson of the then New South Wales Albatross Group (now the Southern Oceans Seabird Study Association – SOSSA) as an adult male (culmen 177 mm) of unknown age with a Gibson Code Index (Gibson 1967) of 14, corresponding to an age of 5–10 years. Thus, the bird, when recaptured in 2001, was aged an estimated 46–51 years. 140-25350 is currently the oldest banded bird in the records of both the Australian and South African banding schemes.

Between the above two dates, the bird has been recaptured five times in New South Wales waters – in August 1966 (when its band was replaced), July 1970, August 1985, August 1989 and July 1994 (SOSSA records) and once with a chick in Albatross Valley, Prince Edward Island, in April 1973 (Anon. 1973, Berruti *et al.* 1975, Grindley 1981). During this time, its Gibson Code increased from 14 in 1960, to 19 in 1966, 20 in 1970 and 21 (the highest score possible; Gibson 1967) in 1985, 1989 and 1994.

DISCUSSION

Because of the problem of band loss from birds marked in the early years, no wandering albatross originally banded at the Prince Edward Islands has as yet attained

a known age of >40 years. However, such birds are likely to be recorded in future because stainless steel bands placed on birds from the 1970s show very little sign of wear and therefore should be able to last for many more decades. A wandering albatross, known to have bred at the Crozet Islands, was recovered 39 years after banding as an adult in 1960 and was estimated to be at least 50 years old when it died (Weimerskirch and Wilson 2000). Wandering albatrosses banded as adults in the early 1960s are still being recaptured on Bird Island, South Georgia, and are therefore also likely to have reached a half-century (J. P. Croxall, British Antarctic Survey, UK *in litt.*).

Other albatross species have been recorded as reaching more than a half-century in age. A Laysan albatross *Phoebastria immutabilis* banded as a breeding adult in 1956 (at at least five years old) was recaptured, still breeding, in February 2002 at an estimated age of at least 51 years (Robbins 2002). This bird, which has been re-banded no less than four times over the years, is now the oldest banded bird in the records of the North American banding scheme. However, the oldest known albatross is a northern royal albatross *Diomedea sanfordi*, which bred at Taiaroa Head, New Zealand, and reached an estimated age of at least 61 years by the last time it was recorded (rearing a chick) in 1989, 51.5 years after being originally colour-banded as a breeding adult at an estimated minimum age of 10 years by L. E. Richdale in 1937 (Robertson 1993). Indeed, that author conjectured that maximum age for this species may approach 100 years, with 1% of the population estimated to survive to 80 years.

It seems clear that albatrosses are among the oldest, if not the oldest, lived birds. However, the long-term demographic studies underway on the wandering albatross at several localities will need to continue for a few more decades before we can safely answer with authority the question posed by D. Gibson in 1967: how long do wandering albatrosses live?

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LITERATURE CITED

- ANON. 1973 — Recovery round-up. *Aus. Bird Bander* **11**: 62–65.
- ANON. 1977 — Recovery round-up. *Corella* **1**: 84–87.
- BATTAM, H. and L. E. SMITH 1983 — *Report on Review and Analysis of: Albatross Banding Data Held by the Australian Bird and Bat Banding Schemes, Other Relevant Data*. [Canberra]; Australian National Parks and Wildlife Service: 165 pp.
- BERRUTI, A. E., BURGER, A. E. and W. R. SIEGFRIED 1975 — Bird ringing at Marion Island. *S. Afr. J. Antarct. Res.* **5**: 50–52.
- BROWN, C. R. and T. B. OATLEY 1982 — Bird ringing at Marion and Prince Edward Islands, 1977–1982. *S. Afr. J. Antarct. Res.* **12**: 45–48.
- COOPER, J. and H. WEIMERSKIRCH 2003 — Exchange of the wandering albatross *Diomedea exulans* between the Prince Edward and Crozet islands: implications for conservation. *Afr. J. mar. Sci.* **25**: 519–523.
- CRAWFORD, R. J. M., COOPER, J., DYER, B. M., GREYLING, M. D., KLAGES, N. T. W., RYAN, P. G., PETERSEN, S. L., UNDERHILL, L. G., UPFOLD, L., WILKINSON, W., DE VILLIERS, M. S., DU PLESSIS, S., DU TOIT, M., LESHORO, T. M., MAKHADO, A. B., MASON, M., MERKLE, D., TSHINGANA, D., WARD, V. L. and P. A. WHITTINGTON 2003 — Populations of surface-nesting seabirds at Marion Island, 1994/95–2002/2003. *Afr. J. mar. Res.* **25**: 427–440.
- DE LA MARE, W. K. and K. R. KERRY 1994 — Population dynamics of the wandering albatross (*Diomedea exulans*) on Macquarie Island and the effects of mortality from longline fishing. *Polar Biol.* **14**: 231–241.
- GARTSHORE, N. A., COOPER, J. and S. HUNTER 1988 — Bird ringing at Marion and Prince Edward Islands, 1982–1987; with an analysis of movements since 1951. *S. Afr. J. Antarct. Res.* **18**: 23–29.
- GIBSON, J. D. 1967 — The wandering albatross (*Diomedea exulans*): results of banding and observations in New South Wales coast waters and the Tasman Sea. *Notornis* **14**: 47–57.
- GIBSON, J. D. and A. R. SEFTON 1959 — First report of the New South Wales Albatross Study Group. *Emu* **59**: 73–82.
- GRINDLEY, J. R. 1981 — Observations of seabirds at Marion and Prince Edward Islands in April and May 1973. In *Proceedings of the Symposium on Birds of the Sea and Shore, 1979*. Cooper, J. (Ed.). Cape Town; African Seabird Group: 169–188.
- McLACHLAN, G. R. 1964 — Tenth ringing report. *Ostrich* **35**: 101–110.
- NEL, D. C., TAYLOR, F., RYAN, P. G. and J. COOPER 2003 — Population dynamics of the wandering albatross *Diomedea exulans* at Marion Island: longline fishing and environmental influences. *Afr. J. mar. Sci.* **25**: 503–517.
- RAND, R. W. 1952 — Bird banding on Marion Island. *Ostrich* **23**: 120–122.
- RYDZEWSKI, W. 1978 — The longevity of ringed birds. *The Ring* **96-97**: 218–262.
- ROBBINS, C. S. 2002 — Patuxent scientist Chan Robbins reports age record for Laysan albatross. *Patuxent HiLites Online*. Monday, 8 April 2002. www.pwrc.usgs.gov/hilites/hilites/040802.htm.
- ROBERTSON, C. J. R. 1993 — Survival and longevity of the northern royal albatross *Diomedea epomophora sanfordi* at Taiaroa Head, 1937–93. *Emu* **93**: 269–276.
- RYAN, P. G., COOPER, J., DYER, B. M., UNDERHILL, L. G., CRAWFORD, R. J. M. and M. N. BESTER 2003 — Counts of surface-nesting seabirds breeding at subantarctic Prince Edward Island, summer 2001/02. *Afr. J. mar. Res.* **25**: 441–452.
- SLADEN, W. J. L., WOOD, R. C. and E. P. MONAGHAN 1968 — The USARP Bird Banding Program, 1958–1965. *Antarct. Res. Ser.* **12**: 213–262.
- STAAR, R. 1998 — Longevity list of birds ringed in Europe. *EURING Newsl.* **2**: 9–17.
- STAAR, R. 2001 — Complementary longevity list of birds ringed in Europe. *EURING Newsl.* **3**: 40–43.
- TICKELL, W. L. N. and J. D. GIBSON 1968 — Movements of wandering albatrosses *Diomedea exulans*. *Emu* **68**: 7–20.
- WEIMERSKIRCH, H. and R. P. WILSON 2000 — Oceanic respite for wandering albatrosses. *Nature* **406**: 955–956.



Wandering albatrosses at Prince Edward Island (photo R. J. M. Crawford)